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FRAME-BASED OCCUPANT WEIGHT ESTIMATION
LOAD CELL WITH BALL-ACTUATED FORCE SENSOR

Abstract of the Disclosure

A seat frame-based occupant weight estimation load cell transfers the seat force to a floor bracket through a spherical ball and a ball actuator. The ball is in contact with the force sensor and has minimal contact area with either the ball actuator or the force sensor so that the transfer of forces not functionally related to occupant weight is minimized. The ball actuator is coupled to the seat frame, and a sensor bracket aligns the ball actuator with respect to the sensor. The sensor bracket is domed to securely anchor the seat to the floor bracket in the event of an inverse overload. A spring disposed between the ball actuator and the dome of the sensor bracket biases the ball against the force sensor to preload the force sensor for enabling off-loading detection.